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A New Species of the Anglerfish Genus *Lophiocharon* Whitley (Lophiiformes: Antennariidae) from Australian Waters

THEODORE W. PIETSCH

School of Aquatic and Fishery Sciences,
College of Ocean and Fishery Sciences, University of Washington,
Box 355100, Seattle, Washington 98195–5100, United States of America
twp@u.washington.edu

ABSTRACT. A new species of the antennariid anglerfish genus *Lophiocharon, L. hutchinsi*, is described on the basis of nine specimens collected from Western Australia, Northern Territory, and Queensland, and from the Aru Islands, Indonesia. It differs from its congeners in having a combination of features that includes a reduced esca, scarcely, if at all, differentiated from the illicium, and a relatively short illicium covered from base to tip with small dermal spinules.

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Within the material of the anglerfish genus *Lophiocharon* Whitley, examined by Pietsch & Grobecker (1987) in their revision of the anglerfish family Antennariidae, are five specimens that do not conform to the diagnosis of either of the two recognized species of the genus, *Lophiocharon trisignatus* (Richardson, 1844) and *Lophiocharon lithinostomus* (Jordan & Richardson, 1908). Uncomfortable at the time about describing a new species based on only a few small individuals, the material was labelled *Lophiocharon* sp. and set aside pending additional specimens (Pietsch & Grobecker, 1987: 231). As in *L. lithinostomus*, the illicium of these unidentified specimens is covered with dermal spinules and the esca is very much reduced or absent, yet the length of the illicium is considerably less than that of both *L. lithinostomus* and *L. trisignatus*. The recent discovery of four additional specimens that compare very well to the original five prompted the following description.

Materials and methods

Standard lengths (SL) are used throughout. Terminology used to describe the parts of the angling apparatus follows Bradbury (1967). Illicium length is measured from the point of articulation of the pterygiophore of the illicium and the illicial bone to the distal surface of the esca excluding escal appendages or filaments. All other methods follow those used by Pietsch & Grobecker (1987). Material is deposited in the Australian Museum, Sydney (AMS), the Western Australian Museum, Perth (WAM), and the Zoological Museum, University of Amsterdam (ZMA).

Genus *Lophiocharon* Whitley, 1933

Lophiocharon Whitley, 1933: 104 [type species *Lophiocharon broomensis* Whitley, 1933 (a junior synonym of *Cheironectes trisignatus* Richardson, 1844), by original designation and monotypy].

Plumantennatus Schultz, 1957: 89 [type species *Antennarius asper* Macleay, 1881 (a junior synonym of *Cheironectes trisignatus* Richardson, 1844), by original designation and monotypy].

Diagnosis. *Lophiocharon* is unique among antennariid genera in having the illicial bone and second dorsal spine widely separated, the distance between the bases of these elements about 50% of the length of the pterygiophore of the illicium (less than about 35% of pterygiophore length in all other antennariids). This genus differs further from all other antennariid genera in having a row of 2–4 regularly spaced, more or less translucent (transparent in some specimens) ocelli on the membrane between each two rays of the caudal fin (best observed with the caudal rays spread; see Pietsch & Grobecker, 1987: 225, 227; figs. 92, 93; colour pl. 42) and in having the anterior tip of the pterygiophore of the illicium distinctly upturned.

Lophiocharon is further distinguished from all other antennariids by having the following combination of character states: skin covered with close-set bifurcate dermal spinules, the length of spines of each spinule not more than twice the distance between tips of spines (Pietsch & Grobecker, 1987: 33, fig. 16G); illicium naked (*L. trisignatus*) or covered throughout its length with dermal spinules (*L. lithinostomus* and *L. hutchinsi*); esca large and complex (*L. trisignatus*) or greatly reduced or absent (*L. lithinostomus* and *L. hutchinsi*); pectoral lobe broadly attached to side of body; caudal peduncle absent, the membranous posteriormost margin of soft-dorsal and anal fins attached to body at base of outermost rays of caudal fin; all rays of caudal fin bifurcate; mesopterygoid absent; pharyngobranchial I absent; epural absent; swimbladder present; dorsal rays 12 or 13; anal rays 6–8; pectoral rays 8 or 9 (Pietsch & Grobecker, 1987: 30, 34, 222; tables 1, 2, 11).

Description. See Pietsch & Grobecker, 1987: 222–223.

Three species, all restricted to the Indo-Australian Archipelago:

Key to known species of the genus *Lophiocharon*

1 Illicium naked, not covered with dermal spinules; esca large, morphologically complex ..... *Lophiocharon trisignatus* (Richardson, 1844)

Ninety-four specimens examined, 8–147 mm SL, Indo-Australian Archipelago.

—— Illicium covered from base to tip with dermal spinules; esca reduced, scarcely if at all differentiated from illicium 2

2 Illicium long, 21.6–36.4% SL (Fig. 1) .... *Lophiocharon lithinostomus* (Jordan & Richardson, 1908)

Fifteen specimens examined, 54–91 mm SL, North Borneo, Sulu Archipelago to Philippines.

—— Illicium short, 9.6–12.9% SL (Fig. 1)..... *Lophiocharon hutchinsi* n.sp.

Nine known specimens, 14–49 mm SL, northern Australia and Aru Islands.

Lophiocharon hutchinsi n.sp.

Figs. 1–2, Plate 1

Antennarius caudimaculatus (*non* Rüppell). Weber, 1913: 562 (misidentification, ZMA 116.513, Aru Islands).

Lophiocharon sp.—Pietsch & Grobecker, 1987: 224, 231; fig. 91 (five specimens, probably representing an undescribed species).

Type material. HOLOTYPE: WAM P.27673-002, 43 mm, James Price Point, 55 km north of Broome, Western Australia, 17°26'S 122°10'E, rotenone, 31 July 1982. PARATYPES: AMS I.15557-283, 2 (47–49 mm), Gulf of Carpentaria, Queensland, 17°00'S 140°16'E; WAM P.24486, 33 mm, Exmouth Gulf, Western Australia, July 1973; AMS I.34780-001, 14 mm, Lee Point, Darwin Country, Northern Territory, 12°20'S 130°53'E, SCUBA, 3.0 m, 11 July 1993; WAM P.31884-001, 31 mm, south of Bluff Point, Enderby Island, Dampier Archipelago, Western Australia, 20°40.9'S 116°33.2'E, box dredge on sandy mud, sponge, and seagrass, 9.0–9.2 m, 23 July 1999; WAM P.28416-015, 2 (19–29 mm), Gantheaume Point, Broome, Western Australia, 17°58'S 122°10'E, rotenone, 2–5 m, 13 September 1982; ZMA 116.513, 18 mm, anchorage off Jedan Island, Aru Islands, Indonesia, Weber, 1899.

Diagnosis. A member of the genus *Lophiocharon*, as recognized by Pietsch & Grobecker (1987), unique among its congeners in having a combination of character states that includes a reduced esca (scarcely, if at all differentiated from the illicium) and a relatively short illicium (Fig. 1), covered from base to tip with small dermal spinules (Plate 1).

Description. Illicium with a single tiny distal filament; length of illicium 9.6–12.9% SL; length of second dorsal-fin spine 14.4–15.8% SL; length of third dorsal-fin spine 19.7–23.4% SL; distance between bases of illicium and second dorsal-fin spine 6.5–7.6% SL; diameter of eye 5.2–7.7% SL; dorsal rays 13; anal rays 7; pectoral rays 9.

Plate 1. *Lophiocharon hutchinsi* n.sp., holotype, WAM P.27673-002, 43 mm, James Price Point, 55 km north of Broome, Western Australia, 17°26'S 122°10'E, rotenone, 31 July 1982.

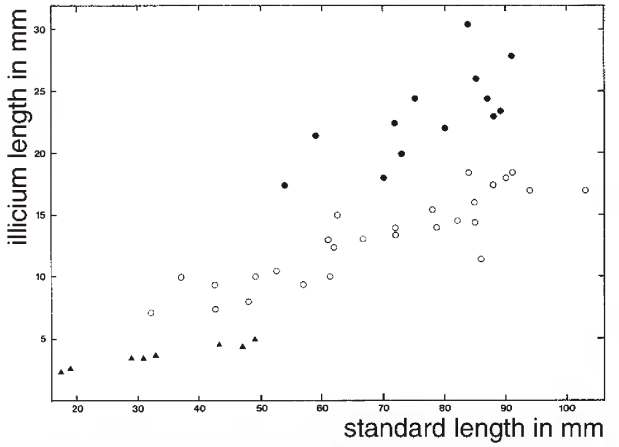

Fig. 1. Relationship between illicial length and standard length for species of *Lophiocharon*: *L. hutchinsi* n.sp. (▲), *L. trisignatus* (Richardson, 1844) (○), and *L. lithinostomus* (Jordan & Richardson, 1908) (●).

All known specimens in light-colour phase: cream, beige, light yellow-brown to brown overall; dorsal and lateral surfaces, including fins, everywhere covered with speckles and mottling of darker brown, especially dense on face around eye; basidorsal spot and light-coloured bar across base of caudal fin absent; illicium without banding; one or two dark circular spots on side of body above and/or slightly behind base of pectoral-fin lobe (similar to those found in other species of the genus, e.g., *L. trisignatus*; see Pietsch & Grobecker, 1987: 225, fig. 92); dark streak sometimes radiating out from eye; caudal ocelli faint, discernible only in largest known specimens (Plate 1).

Additional description as given for the genus.

Etymology. Named for Barry Hutchins, Curator of Fishes, Western Australian Museum, Perth, for providing most of the material on which this new species is based, and for his many contributions to Australian ichthyology.

Distribution. All nine known specimens of *L. hutchinsi* were taken in northern Australian and southern New Guinean waters: five specimens from Western Australia, at Exmouth Gulf, the Dampier Archipelago, and Broome; one from Northern Territory, at Lee Point, near Darwin; two from Queensland in the Gulf of Carpentaria; and one from the Aru Islands in the Arafura Sea.

Comments. *Lophiocharon hutchinsi* is clearly distinguished from *L. trisignatus* in lacking a distinct esca and in having a shorter, spiny illicium (see Fig. 1). On the other hand, the only feature that separates it from *L. lithinostomus* is its considerably shorter illicium (9.6–12.9% SL vs. 21.6–36.4% SL). Because all nine known specimens of *L. hutchinsi* are small (less than 50 mm SL) and all known individuals of *L. lithinostomus* are relatively large (54–91 mm SL), it might be argued that *L. hutchinsi* simply represents juvenile specimens of the latter. However, if this were true it would necessitate an extremely rapid ontogenetic increase in illicial length, the evidence for which is lacking in all other lophiiform fishes for which adequate material has been studied. It should be pointed out also that as presently understood *L. lithinostomus* and *L. hutchinsi* are allopatric: the former ranges from North Borneo to the Sulu Archipelago and the Philippines, whereas the latter is known only from northern Australia and the Aru Islands (Fig. 2). The third known species of *Lophiocharon, L. trisignatus*, is sympatric with both its congeners, ranging from tropical Australia to the Philippines.

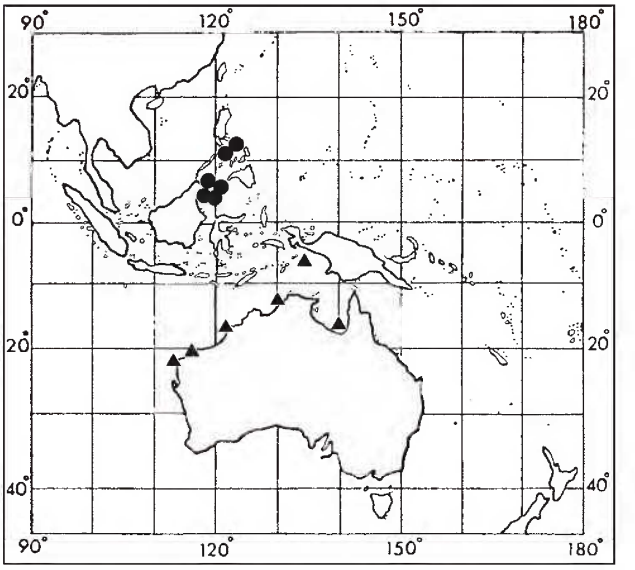

Fig. 2. Known distribution of *Lophiocharon hutchinsi* n.sp. (▲), northern Australia and Aru Islands; and *L. lithinostomus* (Jordan & Richardson, 1908), North Borneo, Sulu Archipelago, and the Philippines (●). A single symbol may indicate more than one capture.

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